

TIME-RESOLVED FOURIER TRANSFORM SPECTROSCOPY WITH CONTINUOUS SCAN INTERFEROMETER

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Most of time-resolved Fourier transform spectra (TRFTS) have been observed with step-scan interferometers, and reports with continuous scan-type interferometers are limited (1,2). In the present study, a continuously scanning FT spectrometer is applied for observing time-resolved spectra after pulse discharge, where we newly developed a method with a help of a chip computer. He-Ne laser fringe signals and a scan signal from Bruker IFS 120 HR are fed into the chip computer SX28AC (Scenix Semiconductors Inc.) with a speed of 50 MIPS, where various kinds of pulses are generated by programming, based on the He-Ne laser fringe signals. Some pulses are used for triggers of an analog-to-digital converter (ADC) mounted on a personal computer, where the first trigger coincides with the edge of a discharge pulse and the second and other ADC triggers are used for data taking with various time intervals after discharge. Then the time-resolved spectrum is obtained with a time resolution of about 5 microsecond. We applied this system to infrared emission spectra originated from pulse discharge in an Ar/hydrogen mixture. The time profile of infrared emission spectrum of the OH radical was also recorded.

(1) P. A. Berg and J. J. Sloan, *Rev. Sci. Instrum.* 64, 2508 (1993).

(2) H. Weidner and R. E. Peale, *Appl. Spectroscopy*, 51, 1106 (1997).

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